

ŒSOPHAGOTOMY FOR FOREIGN BODIES LODGED IN THE TUBE.¹

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THE following cases, neither of which has been published, form the foundation of the remarks I have to offer to the consideration of the society on the subject of opening the œsophagus for the removal of foreign bodies lodged in the tube :

CASE I.—Harriet Jones, æt. 3, while playing with some iron jacks, such as children now use in place of the old-fashioned jackstones, got one of them into her mouth and swallowed it. The alarm was immediately given by her sister, who was playing with her, and when the mother ran to her she seemed to be choking. The mother put her finger back into the fauces, and distinctly felt the foreign body, but only succeeded in pushing it farther down and out of her reach. A doctor in the neighborhood saw her within a few minutes, and passed a probang, which he thought had gone down to the stomach. He gave the child a powder, which had the effect of making her vomit, and the vomiting continued during the whole night. This occurred on Sunday, April 25, 1875. The next day she seemed sick and prostrated ; would not willingly take food, evidently on account of pain in the act of swallowing. She was able to swallow liquids, but bread, or other solids, would go down for a certain distance, and then be rejected. There was a little cough, no dyspnœa, and no evidence that the child felt any local pain. This continued till Thursday, the 29th, when I first saw her, she in the meantime being constantly up in the mother's arms, very weak, and most of the time with high fever. I examined the fauces with my finger, she being under the influence of ether, but could not reach any foreign body, nor could I discover any swelling or any abnormal condition of the parts within my reach. Careful exploration of the neck externally did not reveal any tumefac-

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tion, or any other indication of the presence of the intruder. I then passed into the œsophagus a large leaden probe, which struck a metallic body after it had passed about five inches. I estimated its position to be a little below the cricoid cartilage, but renewed external palpation failed to reveal its presence. I then passed down a pair of long, curved forceps, with which I could easily touch the jack; but, after repeated efforts with instruments of varied form and size, I could not succeed in getting a hold on it. Although as gentle as possible in all our manipulations, a small quantity of bloody mucus showed me that some damage was being done to the mucous membrane, and I desisted after trying a large bougie with which I thought I might push the foreign body down into the stomach. In this, however, I did not succeed, the instrument only passing, as before, about five inches, and being there firmly arrested.

The next day, Friday, the 30th, having provided myself with other appliances, and having asked Dr. George A. Peters, Dr. T. T. Sabine, and Dr. McBurney to assist me, we all met with Dr. Ranney, in whose care the case originally was, and the manipulations of the day before were repeated, and varied in every way without any success in dislodging the piece of iron. It could easily be touched, and several times was fairly seized by the forceps, but they could not be made to keep their hold. Fearing further attempts would only increase local mischief, on consultation we decided to proceed at once to œsophagotomy, for which we had the consent of the parents.

An incision was made about midway between the trachea and the sterno-mastoid muscle, commencing opposite the middle of the thyroid cartilage, and extending to within less than an inch of the top of the sternum. Passing down between the sterno-mastoid and sterno-hyoid muscles, and pushing the omo-hyoid outward, we came down to the level of the carotid sheath, which was also pushed outward, and from this point the dissection was mainly conducted by the handle of the scalpel. Carefully displacing the loose connective tissue, we came down upon the side of the œsophagus, along which could be distinctly seen the inferior laryngeal nerve, at this point giving off a considerable lateral branch to the trachea. This nerve was carefully pushed forward, and it was noticed that every time it was pressed upon by the finger, or the curved spatula, the child showed signs of marked laryngeal distress. One of the pairs of long curved forceps we had been using was then passed down, closed, into the œsophagus, and by it the œsophagus was brought into relief in the wound. A longitudinal incision of about three-quarters of an inch in length was then made, opening into the tube, bringing its cavity very distinctly into view.

Drawing the lips of the œsophageal opening well apart, the position of the foreign body was plainly revealed. An opening had been made, of course, on the left side. Opposite to the opening, therefore, on the right wall of the tube, was seen one limb of the jack projecting into the tube, while the main body of the jack was entirely outside of the tube, which it must therefore have perforated from within outward. How this irregularly shaped body could have traversed the wall of the œsophagus, whether forced through by muscular contraction tending to close the tube upon it, or whether it was pushed through by the sponge probang, or by the repeated handlings of it with the forceps, could not now be ascertained; the fact was plainly visible to all. That it was pushed through by mechanical force, and not by a process of ulceration, seemed evident from its being surrounded and hugged by sound tissues so closely that I had to cut a part of the œsophageal wall in order to get the body back into the tube, and that there was no indication of inflammation, ulceration, or suppuration in the nidus, from which it was removed. By making this incision and thereby releasing one of the buried iron points, the whole was easily rolled out of its bed and removed. It was evident that the body of the jack must have lain outside of the œsophageal tube, and between it and the carotid sheath, upon which it must already have begun to press.

The wound was brought together in its upper three-quarters by fine silk sutures, the lower fourth being left open. Into this open portion of the wound a silk tent was inserted for drainage. No attempt was made to close the wounds of the œsophagus. No vessel had been wounded which required a ligature. The wound was dressed lightly, but, of course, without those antiseptic precautions which were then but imperfectly understood. The parents were directed not to allow the child to swallow anything, and an enema of beef-tea or milk was ordered to be given every three hours. We were informed that from the very first the child had been very averse to swallow anything, and in consequence had grown very thin and feeble.

May 1.—Passed a restless night without sleep. Enemata retained only for about an hour. Ordered three drops of laudanum with each.

May 2.—Great thirst; emaciation very evident; very feeble; wound looks well; no trouble about throat. No swelling of neck.

May 4.—Has been allowed to swallow water freely. It seems to give comfort, though it all comes out of wound, as ascertained by measurement. She swallows easily. Stitches all removed; the wound gaps freely. Enemata are retained longer by the help of the laudanum. She is losing flesh rapidly. No cough, and respiration easy.

May 8.—Seems to be nourished very imperfectly by the enemata, though they are given faithfully. The wound does not granulate: all adhesions have broken up, and it seems to be incapable of reparative action. Some little milk is found, by measurement, to go down to the stomach, but only a trifling quantity. Some bronchitis from constant wetting of the chest. Thirst not so great; very restless and sleepless.

May 10.—Enemata have been given by the long tube and in larger quantity, with a little brandy. She looks a little better, and her pulse is stronger. A patch of erysipelas showed itself on the nose. Ordered the patch to be painted with *tinctura ferri chloridi*, and to add one grain of quinine to each injection, which are now pretty well retained.

May 11.—Seems brighter, but erysipelas has spread on the forehead. She retains the enemata, but she is poorly nourished. I have abstained from passing a tube through the œsophagus, on account of its very damaged condition. Beside the wound made in opening the tube on the left side, there is another large opening on the right side made for the extrication of the foreign body; and there is also, without doubt, much laceration of the mucous membrane caused by our persistent efforts at seizing it with the forceps. I fear that the passage of an instrument from the mouth might do much mischief and might increase future trouble, should the patient recover. The pulse is much better; no reparative action in the wound.

May 12.—A sudden change took place after my visit yesterday. The child seems now dying of mere inanition, though the enemata are given regularly and are mostly well retained. I immediately introduced a tube into the stomach and threw in four ounces of warm milk-punch. It was too late. The child rallied for a little time, and died about three hours after.

CASE II.—Richard Ghent, aged twenty-four, a painter by trade, was admitted into the New York Hospital January 22, 1886. About five weeks before admission, while eating supper, a plate containing four artificial teeth broke in his mouth, and the palate portion was swallowed. He made attempts immediately to vomit, and tried to dislodge the plate, but did not succeed. He says that several surgeons have made attempts to remove the plate but have not succeeded. The patient is a man in fair condition of health and vigor, and does not seem to have suffered materially from failure of nutrition. This is due to the fact that, though he has not been able to swallow solid food, he has been able to swallow fluids with comparative comfort. He says he can feel distinctly the spot where the foreign body has lodged, and indicates a

point just below the larynx, but says it gives him no pain, nor is there any tenderness to be discovered in the region where he says he feels it. A large No. 12 œsophageals-tube detects an obstruction just below the cricoid cartilage, about eight inches from the teeth; a small one, No. 4, passes easily into the stomach.

January 29.—Attempts were made to remove the plate, and it was found not difficult to seize it with the coin-catcher, but when so seized it was found so immovably fixed that the force that we thought it safe to employ did not change its position in the least. A large stomach-pump tube was then passed down to the foreign body, and an attempt made to force it downward into the stomach, with the same result. From the long time which had elapsed from the time of lodgment, and from the fixedness of the body, I felt quite sure that it had partly ulcerated its way out of the tube, and that therefore any undue force in extraction, would, while it was unavailing, prove disastrous to the œsophagus and to the parts around it. Reasoning thus, we recommended that another attempt should be made under ether, and, if not successful, that œsophagotomy should be performed.

February 9.—The patient was placed fully under the influence of ether, and again the foreign body was seized with the coin-catcher, but the complete relaxation produced by the anæsthetic had not loosened in the slightest degree the grasp of the œsophagus, and the operation was proceeded with. An incision four inches and a half in length was made, extending from the top of the thyroid cartilage nearly to the clavicle, along the inner border of the sterno-mastoid muscle, passing obliquely so that the upper end of the incision was half an inch internal to the edge of the muscle, while the lower end overlapped it nearly as much. The omo-hyoid was divided, and then, passing down between the sterno-mastoid and the sterno-hyoid muscles, and pushing the thyroid body inward, the side of the œsophagus was easily reached by separating the loose areolar textures with the finger and the handle of the scalpel. The recurrent laryngeal nerve was not seen, and no vessel was cut of a size requiring ligature. The œsophagus was now made to bulge into the wound by passing the large stomach-pump tube down to the point of obstruction and then pressing with the fingers deeply on the right side of the trachea. This brought the side of the œsophagus fully into view and enabled us very easily to make a longitudinal incision into it about an inch long, opening the tube just above the point of lodgment and bringing into view the foreign body, which was seen to occupy a position parallel with the axis of the œsophagus and about at a right angle to the median plane of the body. It was seized with a dressing forceps, but was found as immovable as ever. It was

not till the incision was prolonged downward, so as to cut through the œsophageal wall which embraced the plate so firmly, that it could be stirred from its bed. It was then easily removed. It would naturally be expected that such firm impaction during so long a period would have been accompanied by some ulceration of the surfaces against which the foreign body had so long been pressing. A careful inspection with a good light enabled us to feel pretty sure that very slight abrasion of the surface had taken place, and that the reason why the plate was so firmly held was that the tube had contracted so firmly above the point of distension as to resist all our efforts at dislodgement. A soft-rubber tube was now introduced through the wound, and passed into the stomach, and left *in situ*. Careful antiseptic dressings were applied, from which the tube, which had a funnel-shaped extremity, was allowed to project. It was extremely easy to pass fluids through this tube into the stomach, usually by merely pouring them slowly into the funnel, though occasionally it was necessary to force them through with the stomach-pump.

There was very little inflammatory reaction after the operation. The temperature scarcely rose above 100°, and the wound behaved in a most satisfactory manner. The tube gave no pain or uneasiness, and afforded the most comfortable possible means of alimentation. His general condition was well maintained, and his nutrition perfect. On the 19th, as the wound was granulating finely, and looking perfectly healthy and ready to heal, the tube was removed. Before it was taken out, however, a similar tube was introduced into the left nostril, and, as the first tube was removed, the second was slipped by the wound into the stomach. This again proved an easy and comfortable way of feeding, the tube through the nose giving rise only to a little soreness in the meatus through which it passed, but not enough to call for treatment. This second tube was used with a view of preventing any matters getting out of the œsophageal wound in the act of deglutition into the yet unhealed fistulous track left by the removal of the original tube. It seemed to answer its purpose perfectly, the wound closing promptly and healing so well that on the 26th the nasal tube was removed, and the patient was allowed to swallow soft food without restriction. No further interruption to the healing occurred, and the patient was well by the 15th of March.

The operation of œsophagotomy for the removal of impacted foreign bodies is now one of universal acceptance. As a legitimate surgical resource, however, it was slow in achieving this position, and was received with much distrust and hesita-

tion till within a comparatively recent period. Mr. Arnott, surgeon of the Middlesex Hospital, writing in 1833, says: "Incision of the œsophagus for the removal of a foreign body is an operation which has rarely been performed. It is stated to have been twice executed in France about a century ago, and once again lately, but I can find no record of its having been done in England." Since the occasions for its performance must have been quite as frequent in former times as they are at present, it is not quite easy to explain the timidity of good and otherwise bold surgeons in regard to this operation. It seems likely that the depth of incision in the neck necessary to reach the œsophagus, and the important organs among which that incision must pass, deterred surgeons from attempting œsophagotomy in cases when we should now consider it clearly indicated. Perhaps also the facts that the occasions for its performance were so rare that no one surgeon could ever hope to acquire a large experience in it is a good reason why but few had the courage to resort to it. That this is true is seen by statistical tables which show that out of eighty-two cases, which have been collected up to date, only five men have had more than two cases; and, of these five, only two had an experience embracing five cases. But probably the most potent reason for not doing œsophagotomy was found in the illusive hope that the foreign body would be spontaneously dislodged. This hope has been, I feel quite sure, encouraged by the frequency with which foreign bodies have been spontaneously expelled from the air-passages after a lodgment of months and even years. Increasing experience has shown that the physical and vital conditions are not the same in the two sets of cases. In the air-passages we have an open tube, a column of air to act upon the foreign body, and all the power of the numerous and strong muscles engaged in the effort of forced expiration. If it were not for the spasmodic resistance of the glottis, every foreign body, not too firmly fixed by size or shape, would be easily expelled through the larynx. No such provision exists in the œsophagus, and, if the intruder can not be dislodged by forceps or probang, and can not be pushed into the stomach, there seem to be hardly any means, and, therefore, little hope of spontaneous expulsion

The consequences of such undisturbed lodgment are now understood to be disastrous in every case, and fatal in a frightfully large proportion. These consequences are familiar to us all, and are yearly illustrated by fatal cases published in the journals. One of these was related by Dr. W. T. Bull, at a recent meeting of the society, in which a horse-chestnut, lodging near the cardiac extremity of the pylorus, had produced a perforation of the pleura, which was filled with a mixture of various ingesta in a state of decomposition, the lung itself being collapsed. Mr. Bryant quotes several cases, one in which a fish-bone caused death by perforation of the heart, another in which the aorta was eroded by a sharp spiculum of bone, and another in which fatal inflammation of the spinal cord was produced as a consequence of ulceration of the intervertebral substance following the arrest of a piece of bone in the œsophagus. Mr. Bryant also alludes to two cases reported by Mr. Erichsen, in one of which a piece of gutta-percha formed for itself a bed in the wall of the œsophagus for upward of six months, and destroyed life by ulceration into a large vessel, and consequent hæmorrhage; and a second in which a fatal result was brought about by a half-crown ulcerating its way into the aorta. One very interesting case occurred to Mr. Bennett May, showing how, even at a period quite long after the original impaction, dangerous results may be apprehended. It occurred in a child 7 years old, from whom he removed, by œsophagotomy, a half-penny which had been swallowed three years and a half before. It had ulcerated through the œsophagus and opened the right bronchus, and was lying partly in the bronchus and partly in the œsophagus. Mr. May had the good fortune to save his patient by his operation. Many other fatal results of œsophageal impaction might be cited, but, from the cursory glance I have been able to take of the literature of the subject, I feel quite sure that it would be difficult to find, among all the recorded cases, as many of spontaneous recovery as I have here given as having a fatal issue.

These considerations explain, at least in part, the slow progress of this operation in public favor, and at the same time they point out the indications for its performance. Thus it may be stated that where a foreign body has lodged in the

œsophagus, and cannot be removed by forceps or snare from the mouth, and can not be pushed into the stomach, it should be removed by œsophagotomy, provided it has lodged at a point accessible to the surgeon's knife, and that the operation should not be delayed in the hope of spontaneous expulsion. Of course, before proceeding to so serious an operation, the diagnosis should be certain, and this usually presents no difficulty. The history of the accident, the sensations of the patient, the behavior in regard to swallowing, and, above all, the positive evidence afforded by the bougie, usually leave no doubt in the mind of the surgeon both as to the fact of impaction and of the precise spot at which it has occurred. It should be noted here that external palpation rarely gives any assistance in ascertaining the presence of a foreign body lodged in the œsophagus. The tube lies so deep behind the trachea and below all the muscles of the neck, that the hardest and most irregular substances lodged in it can very rarely be appreciated by external examination. Of the operation itself, nothing needs to be said to this society. The plan of it is simple and the execution easy, requiring only delicacy and carefulness in its performance. It should be done on the left side, as the œsophagus inclines to that side, and it should be commenced by a very liberal incision of from four to five inches in length, in order to give a chance to conduct the deeper manipulations, as far as possible, by the sense of sight.

It is more particularly to the management of the case after operation that I wish to direct the attention of the society. Various plans have been suggested by various operators as to the two prime points which present themselves to the surgeon after he has completed his operation. First, the healing of the wound with the least risk of wound complications; and, second, nutrition of the patient, not merely with the view of sustaining life, but also of maintaining reparative power at a point at which it will prove itself capable of healing a large, deep and difficult wound. I feel that it was a failure on my part to appreciate the importance of this latter point which caused the unfortunate result in my first case, and I determined, should another case be placed in my hands, that malnutrition should not cause its failure if it could be prevented. Of course, it is

understood that swallowing of food in the usual way can not be permitted, for the obvious reason that such swallowing would prevent the healing of the wounded gullet, would allow the escape of food in a more or less septic condition into the cavity of the wound outside, and thus inflammatory complications of the most serious nature would almost necessarily supervene. To maintain the nutrition of the patient, then, either food must be transmitted to the stomach by tubes past the wounded point of the œsophagus, or else reliance must be had on rectal alimentation. Rectal alimentation, however, affords us only a limited resource in nutrition. Though it may serve us well during temporary interruption of gastric digestion from any cause, yet life can not long be sustained by it, and, when sustained, the nutritive conditions can rarely be kept up to the high reparative point necessary for the healing of a large operation wound. This view of the limitation of rectal alimentation has been growing stronger in my mind ever since my attention was called to the subject by the conspicuous failure to secure proper nutrition in the first case I have narrated; and I believe that, if I had fully appreciated just how little reliance was to be placed on it, my little patient might have been alive and well at this moment. It is true that in this case the conditions were unfavorable for the passage of a tube through either the mouth or the wound. The extensively damaged œsophagus made it highly proper to avoid any further injury, if it could in any way be avoided, and this must be the explanation, if not the justification, of the course pursued. But had I at that time the same convictions I now entertain with reference to rectal alimentation, I should at all hazards have passed a tube through either the mouth or the wound, and thus have secured that full reparative nutrition without which, in my case, all repair broke up at the wound, erysipelas set in, and the patient sunk so rapidly that, when a tube was introduced and plentiful nourishment was supplied, it came too late to save the life which I had been for so many days blindly trusting to a most unreliable supporter.

The management of the second case seems to me to present a much better prospect of success. Determined to secure gastric alimentation, the choice of means lay between introducing

a tube through the mouth or wound whenever it was necessary to give nourishment, or leaving a tube, passed through the mouth or wound, constantly *in situ*, thus permitting nourishment being given whenever desired. I chose to leave the tube in the wound for several reasons. First, I thought that the tube would insure the drainage from the bottom of the deep wound; secondly, that it would tend to prevent the entrance of any matters regurgitated from the stomach; and, lastly, I was confident that the tube through wound would be much less distressing to the patient than a similar tube passed through the mouth or the nostril. I entirely rejected the idea of the frequent introduction of the tube, because I felt convinced that such a procedure would not only seriously disturb the healing process, but would be such a dread and a trial to the patient, and such a tax on the surgeon, that the result would be that the tube would be introduced as rarely as possible, and, when introduced, the stomach would be distended with as much food as it would hold, in order to prevent the necessity of early repetition of the troublesome procedure—a condition of the stomach by no means conducive to comfort or to good digestion. In all these respects the case answered my best expectations. The tube in the wound coming out through the dressing was always available for use, and small quantities of nourishing fluid were constantly supplied by the hands of the nurse without pain and without trouble, and without any overtaxing or distressing of the digestion; and regurgitation, which rarely occurred, took place through the tube, without at any time appearing around or through the dressings. The wound was perfectly drained, and granulated healthfully from the beginning. The change to the nasal tube was made at the end of ten days, and this latter was kept in place for a week to allow the wound to fill up solidly with granulations. The healing of the wound from this time was rapid and complete. The man is not now conscious of any impediment to the act of swallowing.

The results of the operation of œsophagotomy are encouraging. I am indebted to my friend, Dr. S. W. Gross, of Philadelphia for the following statement, which he very kindly gleaned for me from his abundant statistical resources: The

whole number of persons operated upon up to date is 82. Of these cases 63 were successful, and 19 followed by death. Of the 82 cases the foreign body was found and removed in 74, and of these 57 recovered and 17 died. The foreign body was not found in 7 cases, and in one case it was found but slipped into the stomach, and passed *per anum*. In one of Billé's cases the foreign body slipped into the stomach, and was thence removed by gastrotomy, the patient dying of peritonitis. In this case, of course, the fatal result should not be credited to the œsophageal operation. Of the 16 fatal cases of œsophagotomy 8 are stated to have died of abscess, provoked by the lodgment of the foreign body, 2 died of exhaustion, 2 of septicæmia, one of pneumonia, and the rest not clearly stated. It would be interesting to know the relation of the death-rate to the time at which operation was performed after the impaction. I feel certain that delay would be accountable for a very greatly increased death-rate. In this connection it may be well to call attention to the evil effects of delay, even in those cases where the foreign body can be dislodged without œsophagotomy. In these cases two causes contribute to make delay disastrous. First, the tendency of the foreign body, particularly if it is hard and rough, to make its way out of the tube by ulceration, as illustrated by the first case here reported, and, secondly, by the contraction of the circular fibres of the œsophagus round the intruder, as described in the second case. Both these causes are cumulative in their action, and delay, therefore, must be constantly rendering both of them more and more efficient for mischief. A good plate which to-day can be removed with comparative ease has by to-morrow so buried its sharp points in the mucous membrane, or is so firmly grasped by muscular contraction, that œsophagotomy has become the only resource; and the horse-chestnut, as in Dr. Bull's case, which, on the day on which it was swallowed, might easily have been pushed into the stomach, gave infinite trouble when attempts were made several days after to dislodge it, and finally caused the death of the patient.

From these considerations I would deduce the surgical rule: To attempt the removal of foreign bodies impacted in the œsophagus as soon as proper instruments can be procured,

and, failing after a fair and sufficient trial, to proceed at once to the operation of œsophagotomy.

DISCUSSION.

DR. ROBERT ABBE thought an attempt should always be made with considerable hope of dislodging the foreign body under ether. The past winter he saw a woman twelve days after she had swallowed a plate with one tooth which had lodged two inches below the cricoid. A great many attempts had been made for a week by two or three surgeons to remove it, but without success. Dr. Abbe was able to get the coin-catcher behind the foreign body, but, with all the force which he dared exert, he failed to dislodge it. The patient was then put under the influence of ether, which so relaxed the œsophageal structures that, with less force than he had previously exerted, he was enabled to remove the plate. It seemed to him, also, that the œsophageal wound might safely be closed and the tube be introduced, protruding from the mouth, from the first. This fact was demonstrated in some cases recently reported in English journals, in which the patient tolerated the tube for a number of days with comparative comfort.

DR. MARKOE said he had not seen the reports referred to by Dr. Abbe, but he knew of cases in which that practice had been adopted, and the objection to it was that the tube caused a great deal of faucial irritation, and it was abandoned. But in his own case the tube, being introduced through the wound, gave such comfort that he would not think of trying any other method.

DR. A. G. GERSTER wished to add his testimony to the advantages of the continuous use of the elastic tube for the purpose of alimentation as illustrated in three cases. Two were cases of partial extirpation of the larynx, in one of which the tube was left in for twelve days, and in the other for fourteen days. In one the tube projected through the wound made by removing one half of the larynx, and was borne so well, and enabled alimentation to be carried to such an extent that the patient increased very rapidly in weight. In the third case, in which the entire tongue and floor of the mouth down to the epiglottis and middle portion of the inferior maxilla were removed, and deglutition was out of the question, the tube was still in (the sixteenth day after the operation), and alimentation was kept up with a great deal of comfort to the patient. In this case a strong fillet of silk was passed through the stump of the tongue in order that the subsequent introduction of the tube might be facilitated by pulling the stump forward;

but when the tube was removed on the fifth day, and an attempt was made to feed the patient in the afternoon, it caused so much excitement that the tube was replaced and food was introduced as before. He was anxious to remove the tube, as it was of English make, hard and webbed, and was liable, by pressure of the calcareous tracheal rings, to produce a sore. But such an effect did not take place. The tube was removed once in three or four days for the purpose of cleansing and replacing it by a new one if it had become rough. By nourishing the patient through the œsophageal tube they had been enabled to carry him through an attack of catarrhal pneumonia which developed the third day after the operation.

DR. F. LANGE performed œsophagotomy last summer at the German Hospital upon a man about 40 years of age who had swallowed a plate with several teeth some time before admission, but exactly how long he could not recall. Previous to admission, some surgeons had made ineffectual attempts to withdraw the foreign body, which was situated near the entrance to the stomach. Dr. Lange failed under anæsthesia and then performed œsophagotomy, thinking he would thus be enabled to get a safer grasp on the foreign body. He was, however, still unable to extract it, or to push it down, until finally it went down into the stomach under very slight pressure. The further fate of the foreign body was unknown; the man was discharged after some weeks, cured, and had not been heard of since. With regard to the treatment of the wound, he closed the walls of the œsophagus with catgut, inserted only a few sutures in the external wound, leaving it partially open and making free drainage. The man swallowed from the beginning, the first days receiving only small quantities of water and milk administered cautiously. Primary union took place, the wound closing quickly. Dr. Lange thought such treatment would be justified in cases in which the tissue at the œsophageal opening was healthy; he did not know that it would be proper if suppuration had taken place at the point of operative interference. In this case the treatment was quite satisfactory; no food appeared at the external wound.

DR. MARKOE said that success depended entirely upon closure of the œsophageal wound, and, if this could be secured, the method adopted by Dr. Lange was undoubtedly the best. But, if union failed to take place at any point in the line of incision, septic material would be likely to enter it, especially during the act of swallowing food. More recent writers, he believed, were almost unanimously of the opinion that the wound should not be closed.

The PRESIDENT remarked that, in the case of the child whose history Dr. Markoe had related, it would have been very unwise to close the

œsophagus and allow the child to swallow at once, as it would have forced the food into the lacerated tissue on the right side of the œsophagus.

DR. J. C. HUTCHINSON thought that, when it became necessary to introduce the œsophageal tube to nourish a patient, it would be much more convenient to the surgeon, and more comfortable to the patient, to introduce it through the nose. Such had been his experience after extirpation of the tongue, and in other cases. He had observed the same difficulty referred to by the author of the paper when the tube was introduced through the mouth—namely, faucial irritation. He employed the tube for as long a time as fifteen days, taking it out now and then to cleanse it, and substituting a new one if it became roughened.